Percutaneous Transhepatic Cholangioscopic Intervention in the Management of Complete Membranous Occlusion of Bilioenteric Anastomosis: Report of Two Cases

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Postoperative biliary stricture is a relatively rare but serious complication of biliary surgery. Although Roux-en-Y hepaticojejunostomy or choledochojejunostomy are well-established and fundamental therapeutic approaches, their postoperative morbidity and mortality rates have been reported to be up to 33% and 13%, respectively. Recent studies suggest that percutaneous transhepatic intervention is an effective and less invasive therapeutic modality compared with traditional surgical treatment. Compared with fluoroscopic intervention, percutaneous cholangioscopy may be more useful in biliary strictures, as it can provide visual information regarding the stricture site. We recently experienced two cases with complete membranous occlusion of the bilioenteric anastomosis and successfully treated both patients using percutaneous transhepatic cholangioscopy. (Gut and Liver 2009;3:352-355)

Key Words: Bile duct obstruction; Postoperative complications

INTRODUCTION

Benign postoperative biliary stricture is one of the serious complications of biliary surgery. Although the bilioenteric anastomosis has become the traditional treatment of choice for patients with benign biliary strictures, recent studies suggested that percutaneous transhepatic therapy would be an effective and less invasive therapeutic modality.1,2 Both fluoroscopy and cholangioscopy can guide the percutaneous balloon dilation with or without stent insertion. Compared with fluoroscopic intervention, percutaneous transhepatic cholangioscopy (PTCS) may be more useful in biliary strictures, as it can provide a direct vision on the stricture site and, if needed, biopsy specimens for tissue diagnosis.3 Recently, we experienced two cases with complete membranous occlusion of the bilioenteric anastomosis and successfully treated both patients using percutaneous transhepatic cholangioscopy.

CASE REPORT

1. Case 1

A 60-year-old male was admitted with fever and jaundice. He had undergone cholecystectomy 23 years prior to admission and, 1 year after this procedure, he underwent Roux-en-Y hepaticojejunostomy due to postoperative biliary stricture. He had been admitted three times during the last 4 years because of recurrent cholangitis and intrahepatic duct stones. The anastomosis site was patent on cholangiography and PTCS at each admission. Five months after the last admission, he was again admitted for fever that had developed 1 day earlier. His body temperature was 36.9°C, but he was grossly icteric. Laboratory tests revealed a white blood cell count of 27,400/mm³, aspartate aminotransferase of 199 IU/L (reference range, <40 IU/L), alanine aminotransferase of 242 IU/L (<40 IU/L), alkaline phosphatase of 269 IU/L (40-120 IU/L), gamma-glutamyl transferase of 330 IU/L (11-63 IU/L), total bilirubin of 8.0 mg/dL (0.2-1.2...

A computed tomography (CT) scan showed that both intrahepatic ducts were diffusely dilated. Percutaneous transhepatic biliary drainage catheter insertion and subsequent PTCS were performed. The contrast medium did not pass through the anastomosis site and a dark dimpled spot was observed on the confluent portion of the two main intrahepatic bile ducts (Fig. 1A). There was no abnormal vessel or mucosal nodularity suggesting malignancy around the lesion. The dimpled spot was repeatedly tapped with the flexible end of the guidewire and the guidewire then passed through the anastomosis (Fig. 1B). After balloon dilation, an 18-Fr drainage catheter was passed through the anastomosis (Fig. 2). Repeated PTCS after 2 months and 8 months revealed suboptimal patency of the anastomosis site. Therefore, additional dilation was performed. A clamped catheter was maintained in the anastomosis site, and follow-up PTCS was scheduled to assess patency.

2. Case 2

The second case was a 26-year-old woman with postprandial right upper quadrant abdominal pain. She had undergone an operation for removal of a hepatic mass including hepaticojejunostomy 25 years prior to admission. During the last 5 years, her blood chemistry tests repeatedly showed elevated levels of aspartate and alanine aminotransferase. Two years prior to admission, she had experienced an episode of self-limiting jaundice, and suffered from postprandial abdominal pain and jaundice for the 3 days before admission. A complete blood count showed WBC at 3,300/mm$^3$, hemoglobin of 12.1 g/dL, and a platelet count of 102,000/mm$^3$. Blood chemistry tests revealed aspartate aminotransferase of 54 IU/L, alanine aminotransferase of 100 IU/L, alkaline phosphatase of 381 IU/L, gamma-glutamyl transferase of 182 IU/L, total bilirubin of 2.2 mg/dL, and direct bilirubin of 0.8 mg/dL. A CT scan showed splenomegaly and cirrhotic change in the remnant liver with multiple intrahepatic stones in dilated intrahepatic ducts. No contrast medium passed through the bilioenteric anastomosis when cholangiography was performed. Cholangioscopy showed a small dimple on the anastomosis site without any finding suggestive of malignancy. Repetitive tapping on this lesion with the flexible end of the guidewire created a passage to the jejunum, and balloon dilation was performed.

![Fig. 1.](image)

(A) Case 1. The arrows indicate the small, dark, dimpled spot, and the arrowheads indicate scar changes. (B) Case 1. The dark, dimpled spot was tapped lightly and repetitively with the flexible end of the guide wire. (C) Case 2. The arrows indicate the dimpled lesion, which appears fibrotic. (D) Case 2. The lesion was tapped lightly and repetitively with the flexible end of the guide wire.